Abstract of the Disclosure

Provided are methods and apparatuses for encoding and decoding three-dimensional object data, which consists of point texture data, voxel data, or octree data. The method of encoding three-dimensional object data involves generating three-dimensional object data having a tree structure in which nodes are attached labels indicating their types; encoding nodes of the three-dimensional object data; and generating the three-dimensional object data whose nodes are encoded into a bitstream. The apparatus for encoding three-dimensional object data includes a tree structure generator which generates three-dimensional object data having a tree structure in which nodes are attached labels indicating their types; a merging order selector which merges the nodes of the three-dimensional object data by referring to their labels; a node encoder which encodes merged nodes; and a bitstream generator which generates the three-dimensional object data whose merged nodes are encoded into a bitstream. The method of decoding three-dimensional object data involves reading continue flag information from a bitstream of encoded three-dimensional object data and decoding the continue flag information; decoding note type information of the bitstream; decoding an 'S' node if the note type information indicates that a current node is an 'S' node and decoding a PPM node if the note type information indicates that the current node is a PPM node; and restoring the three-dimensional object data whose nodes are encoded to a tree structure. The apparatus for decoding three-dimensional object data includes a bitstream reader which receives a bitstream of encoded three-dimensional object data; a node decoder which decodes the bitstream; and a tree structure restorer which restores decoded nodes to a tree structure.